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**CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10)**

Applicant(s): Liu, et al.

Docket No.

15436.247.14.1

Application No.  
10/696,304

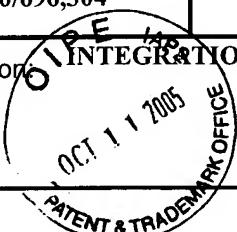
Filing Date  
October 27, 2003

Examiner  
Eric L. Bolda

Customer No.  
022913

Group Art Unit  
3663

Invention: **INTEGRATION OF A GAIN EQUALIZATION FILTER IN A GAIN MEDIUM**



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**Response to Restriction and Election of Species Requirements (5 pgs); Transmittal Letter (1 pg in duplicate); and Postcard**

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**TRANSMITTAL LETTER**  
**(General - Patent Pending)**

Docket No.  
**15436.247.14.1**

In Re Application Of: **Liu, et al.**

Application No. <b>10/696,304</b>	Filing Date <b>October 27, 2003</b>	Examiner <b>Eric L. Bolda</b>	Customer No. <b>022913</b>	Group Art Unit <b>3663</b>	Confirmation No. <b>5109</b>
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Title **INTEGRATION OF A GAIN EQUALIZATION FILTER IN A GAIN MEDIUM**



**COMMISSIONER FOR PATENTS:**

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**Response to Restriction and Election of Species Requirements (5 pgs); Certificate of Mailing by "Express Mail"; and Postcard**

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*Peter F. Malen, Jr.*  
*Signature*

Dated: **October 11, 2005**

**Peter F. Malen, Jr.**  
**Attorney for Applicants**  
**Reg. No. 45,576**  
**Telephone No. 801-533-9800**

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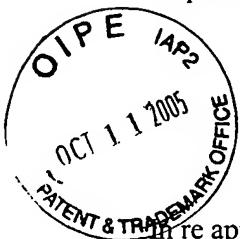
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PATENT APPLICATION

Docket: 15436.247.14.1



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Liu et al.

Serial No.:	10/696,304	)	Art Unit
		)	3663
Filed:	October 27, 2003	)	
Conf. No.:	5109	)	
For:	INTEGRATION OF A GAIN EQUALIZATION FILTER IN A GAIN MEDIUM	)	
Examiner:	Eric L. Bolda	)	
Customer No.:	022913	)	

**MAIL STOP: AMENDMENT**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, VA 22313-1450**

**RESPONSE TO RESTRICTION AND ELECTION OF SPECIES REQUIREMENTS**

Dear Sir:

This paper is responsive to the Office Action mailed September 22, 2005 (the "Office Action").

**I. Restriction Requirement**

In the Office Action, the Examiner set forth a Restriction Requirement that identified what the Examiner has characterized as three (3) distinct inventions. In particular, the Examiner suggested in the Office Action that the present application contains claims directed to the following three inventions:

- I. - Claims 1-15, drawn to an optical waveguide, classified in class 385, subclass 50;
- II. - Claims 16-30, drawn to an optical fiber, classified in class 359, subclass 337.1; and
- III - Claims 31-37, drawn to an optical amplifier, classified in class 359, subclass 341.41.

In response to the Restriction Requirement set forth in the Office Action, Applicant hereby elects Invention I (claims 1-15) for examination, without traverse.

**II. Election of Species Requirements**

**a. species defined**

In the Office Action, the Examiner has articulated five (5) Election of Species Requirements in the Office Action which define no less than one hundred ninety two (192) species corresponding to elected Invention I. Particularly, Applicant understands the Election of Species requirements made by the Examiner to define the following species: I.A.1.a.i.AA; I.A.1.a.i.BB; I.A.1.a.i.CC; I.A.1.a.i.DD; I.A.1.a.ii.AA; I.A.1.a.ii.BB; I.A.1.a.ii.CC; I.A.1.a.ii.DD; I.A.1.b.i.AA; I.A.1.b.i.BB; I.A.1.b.i.CC; I.A.1.b.i.DD; I.A.1.b.ii.AA; I.A.1.b.ii.BB; I.A.1.b.ii.CC; I.A.1.b.ii.DD; I.A.1.c.i.AA; I.A.1.c.i.BB; I.A.1.c.i.CC; I.A.1.c.i.DD; I.A.1.c.ii.AA; I.A.1.c.ii.BB; I.A.1.c.ii.CC; I.A.1.c.ii.DD; I.A.2.a.i.AA; I.A.2.a.i.BB; I.A.2.a.i.CC; I.A.2.a.i.DD; I.A.2.a.ii.AA; I.A.2.a.ii.BB; I.A.2.a.ii.CC; I.A.2.a.ii.DD; I.A.2.b.i.AA; I.A.2.b.i.BB; I.A.2.b.i.CC; I.A.2.b.i.DD; I.A.2.b.ii.AA; I.A.2.b.ii.BB; I.A.2.b.ii.CC; I.A.2.b.ii.DD; I.A.2.c.i.AA; I.A.2.c.i.BB; I.A.2.c.i.CC; I.A.2.c.i.DD; I.A.2.c.ii.AA; I.A.2.c.ii.BB; I.A.2.c.ii.CC; I.A.2.c.ii.DD; I.A.3.a.i.AA; I.A.3.a.i.BB; I.A.3.a.i.CC; I.A.3.a.i.DD; I.A.3.a.ii.AA; I.A.3.a.ii.BB; I.A.3.a.ii.CC; I.A.3.a.ii.DD; I.A.3.b.i.AA; I.A.3.b.i.BB; I.A.3.b.i.CC; I.A.3.b.i.DD; I.A.3.b.ii.AA; I.A.3.b.ii.BB; I.A.3.b.ii.CC; I.A.3.b.ii.DD; I.A.3.c.i.AA; I.A.3.c.i.BB; I.A.3.c.i.CC; I.A.3.c.i.DD; I.A.3.c.ii.AA; I.A.3.c.ii.BB; I.A.3.c.ii.CC; I.A.3.c.ii.DD; I.A.4.a.i.AA; I.A.4.a.i.BB; I.A.4.a.i.CC; I.A.4.a.i.DD; I.A.4.a.ii.AA; I.A.4.a.ii.BB; I.A.4.a.ii.CC; I.A.4.a.ii.DD; I.A.4.b.i.AA; I.A.4.b.i.BB; I.A.4.b.i.CC; I.A.4.b.i.DD; I.A.4.b.ii.AA; I.A.4.b.ii.BB; I.A.4.b.ii.CC; I.A.4.b.ii.DD; I.A.4.c.i.AA; I.A.4.c.i.BB; I.A.4.c.i.CC; I.A.4.c.i.DD; I.A.4.c.ii.AA; I.A.4.c.ii.BB; I.A.4.c.ii.CC; I.A.4.c.ii.DD; I.B.1.a.i.AA; I.B.1.a.i.BB; I.B.1.a.i.CC; I.B.1.a.i.DD; I.B.1.a.ii.AA; I.B.1.a.ii.BB; I.B.1.a.ii.CC; I.B.1.a.ii.DD; I.B.1.b.i.AA; I.B.1.b.i.BB; I.B.1.b.i.CC; I.B.1.b.i.DD; I.B.1.b.ii.AA; I.B.1.b.ii.BB; I.B.1.b.ii.CC; I.B.1.b.ii.DD; I.B.1.c.i.AA; I.B.1.c.i.BB; I.B.1.c.i.CC; I.B.1.c.i.DD; I.B.1.c.ii.AA; I.B.1.c.ii.BB; I.B.1.c.ii.CC; I.B.1.c.ii.DD; I.B.2.a.i.AA; I.B.2.a.i.BB; I.B.2.a.i.CC; I.B.2.a.i.DD; I.B.2.a.ii.AA; I.B.2.a.ii.BB; I.B.2.a.ii.CC; I.B.2.a.ii.DD; I.B.2.b.i.AA; I.B.2.b.i.BB; I.B.2.b.i.CC; I.B.2.b.i.DD; I.B.2.b.ii.AA; I.B.2.b.ii.BB; I.B.2.b.ii.CC; I.B.2.b.ii.DD; I.B.2.c.i.AA; I.B.2.c.i.BB; I.B.2.c.i.CC; I.B.2.c.i.DD; I.B.2.c.ii.AA; I.B.2.c.ii.BB; I.B.2.c.ii.CC; I.B.2.c.ii.DD;

I.B.2.c.ii.DD; I.B.3.a.i.AA; I.B.3.a.i.BB; I.B.3.a.i.CC; I.B.3.a.i.DD; I.B.3.a.ii.AA; I.B.3.a.ii.BB; I.B.3.a.ii.CC; I.B.3.a.ii.DD; I.B.3.b.i.AA; I.B.3.b.i.BB; I.B.3.b.i.CC; I.B.3.b.i.DD; I.B.3.b.ii.AA; I.B.3.b.ii.BB; I.B.3.b.ii.CC; I.B.3.b.ii.DD; I.B.3.c.i.AA; I.B.3.c.i.BB; I.B.3.c.i.CC; I.B.3.c.i.DD; I.B.3.c.ii.AA; I.B.3.c.ii.BB; I.B.3.c.ii.CC; I.B.3.c.ii.DD; I.B.4.a.i.AA; I.B.4.a.i.BB; I.B.4.a.i.CC; I.B.4.a.i.DD; I.B.4.a.ii.AA; I.B.4.a.ii.BB; I.B.4.a.ii.CC; I.B.4.a.ii.DD; I.B.4.b.i.AA; I.B.4.b.i.BB; I.B.4.b.i.CC; I.B.4.b.i.DD; I.B.4.b.ii.AA; I.B.4.b.ii.BB; I.B.4.b.ii.CC; I.B.4.b.ii.DD; I.B.4.c.i.AA; I.B.4.c.i.BB; I.B.4.c.i.CC; I.B.4.c.i.DD; I.B.4.c.ii.AA; I.B.4.c.ii.BB; I.B.4.c.ii.CC; and, I.B.4.c.ii.DD.

In view of the complexity of the Election of Species Requirements made by the Examiner, *Applicant respectfully requests that the Examiner carefully review the preceding list of species and confirm that Applicant's understanding of the Election of Species Requirements, with respect to the species defined by such requirements, is correct.*

**b. election of species by Applicant**

Applicant notes at the outset that claim 1 is generic to all 192 species and, as noted by the Examiner, upon the allowance of a generic claim, Applicants will be entitled to consideration of claims to additional species that are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 C.F.R. § 1.141. With the foregoing in view, Applicant hereby elects species I.A.1.a.i.AA with traverse (see II.c. below). Claims 1, 4, 5, 10-12, 14 and 15, at least, are readable on the elected species. Applicants' election herein is made without prejudice.

**c. traversal of election of species requirements**

Applicant hereby *traverses* the election of species requirements, and submits that for at least the reasons outlined below, some, if not all, of the election of species requirements lack an adequate basis and should accordingly be withdrawn.

The examination guidelines make clear that different species, by definition, must include mutually exclusive characteristics. See *MPEP § 806.04(f)*. In the Office Action, the Examiner has defined various species based upon the waveguide doping material employed. *Office Action at 5*. However, it is quite clear from the specification that the claimed waveguide doping materials (see claim 11) are not mutually exclusive.

Particularly, the specification states at paragraph [022] that “Examples of gain medium … include … fibers doped with Erbium, Yb, Sm, Tm or any combination thereof.” *Emphasis added.* Claim 11 is in accord, reciting “… a doped portion that is doped with at least one of Erbium, Yb, Sm and Tm …” *Emphasis added.* Clearly, the use of one particular doping medium does not preclude simultaneous usage of other doping media as well. Thus, the requirement of the Examiner that Applicant elect a species corresponding to only one of the four recited doping materials is improper. For at least this reason, Applicant submits that such requirement is not well taken and should be withdrawn.

Similarly, the Examiner has defined various species based upon the location of the gain equalization filter (“GEF”) with respect to the waveguide core and the cladding. *Office Action at 5.* However, it is quite clear from the specification that the different GEF locations (see claim 10) are not mutually exclusive. Particularly, the specification states at paragraph [023] that “A GEF may be formed inside the core of the waveguide, in the cladding, or in both.” *Emphasis added.* Claim 10 is in accord, reciting “… wherein the at least one gain equalization filter is formed in at least one of the inside core and the cladding …” *Emphasis added.* Clearly, the presence of a GEF in one particular location does not preclude the presence of a GEF in another location as well. Thus, the requirement of the Examiner that Applicant elect a species corresponding to only one of the two recited GEF locations is improper. For at least this reason, Applicant submits that such requirement is not well taken and should be withdrawn.

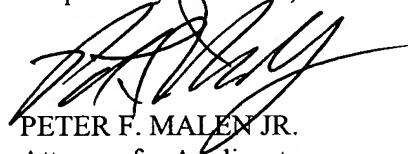
Finally, the Examiner has defined various species based upon the location of the GEF relative to the gain section. *Office Action at 4.* However, it is quite clear from the specification that the different GEF locations relative to the gain section (see claims 2 and 3) are not mutually exclusive. Particularly, the specification states at paragraph [021] that “Any number of GEFs can be integrated with any number of gain sections in any order.” *Emphasis added.* Clearly, the presence of a GEF in one particular location relative to a gain section does not preclude the presence of one or more GEFs in one or more other locations as well. Thus, the requirement of the Examiner that Applicant elect a species corresponding to only one of the two recited GEF locations relative to the gain section is improper. For at least this reason, Applicant submits that such requirement is not well taken and should be withdrawn.

An action on the merits of all the claims and a Notice of Allowance thereof are respectfully requested.

In the event that the Examiner wishes to discuss any of the matters contemplated hereby, the Examiner is invited to initiate a telephone conversation with the undersigned.

DATED this 11<sup>th</sup> day of October, 2005.

Respectfully submitted,



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